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BASIC NEUROLOGY FOR THE ENGLISH TEACHER:

A SELECTED BIBLIOGRAPHY

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All of us [in English education] must learn far more about biology and physiology than we have previously been asked to learn. Closer ties with departments of biological sciences and with the medical schools affiliated with our universities also seem to be suggested. (Emig, 1978)

With more and more researchers taking up Emig's challenge, investigating the previously ignored physiological considerations of the composing process, there is a need for a bibliography to introduce teacher/researchers to the major studies done in the field of neurology as it relates to writing.

"Basic Neurology for the English Teacher: A Selected Bibliography" is divided into five categories. The first section, General Neurolinguistics, contains works which provide clear and readable introductions to the complex processes and physiology of the brain. Especially notable are the pieces by Emig (1978), Lenneberg (1973), and Wittrock (1977). The second section, Language Localization, contains works which attempt to establish localities within the brain where specific neurological functions take place. Much of what has been learned has come from the study of brain-damaged subjects. Section three, Hemisphere Lateralization, contains works which deal with the origin and domain of hemispheric specialization. Section four, Information Processing, contains works which treat the brain as an information processing system, with obvious analogies with the computer and computer languages. Finally, Section five, Glossaries, offers a select group of glossaries to explain somewhat foreign, often technical vocabulary which is anticipated to be encountered in readings in neurological studies.

This bibliography was compiled and annotated by David Roberts, of Bluefield State College, Bluefield, West Virginia, and James Strickland, of Trocaire College, Buffalo, New York, as part of an ongoing series of specialized working research bibliographies developed under Dr. Patrick Hartwell and Dr. Dan J. Tannacito, of Indiana University of Pennsylvania.

J.S.

BASIC NEUROLOGY FOR THE ENGLISH TEACHER:

A SELECTED BIBLIOGRAPHY

1. General Neurolinguistics

Brain and Language, 1980, 11(2).

Special issue deals with electroencephelogram and evoked response potentials relating to language functions.

Emig, J. Hand, eye, brain: some "basics" in the writing process.

In C. R. Cooper & L. Odell (Eds.), Research on composing: points of departure. Urbana, Il.: National Council of Teachers of English, 1978.

Discusses the interaction of the organic structures involved in the writing process. Calls for research to discover the biology and physiology of writing. (Exciting, inspiring, provocative.)

Lenneberg, E. H. Biological foundations of language. New York:

John Wiley and Sons, 1967.

Indisputably argues that behavior is both biological and psychological in nature. The first and best known volume dealing with the biology of language. (A remarkable book by the late leading authority in the field.)

Lenneberg, E. H. The neurology of language. Daedalus, 1973, 102, 115-133.

Gives a clear and concise introduction to neurolinguistics.

Lenneberg, E. H., & Lenneberg, E. Foundations of language development: a multidisciplinary approach. (2 vols.)

New York: Academic Press, 1975.

Presents reports on the most significant works on brain and language during the late sixties and early seventies.

Scientific American, 1979, 24 (3)

Special issue on the brain offers articles by such prominent researchers as David Hubel, on "Neurobiology," Norman Geschwind, on "Localization Function," and others. (Available from W. H. Freeman and Company, San Francisco 94104, under the title, The brain.)

Teyler, T. J. An introduction to the neurosciences. In M. C.

Wittrock (Ed.), The human brain. Englewood Cliffs, N. J.:

Prentice Hall, 1977.

Gives a highly readable, thorough introduction to the brain and its function.

Weigl, E. On written language: its acquisition and its alexic -

agraphic disturbances. In Lenneberg & Lenneberg, 2.

Discusses basic psycholinguistic and neurolinguistic aspects of acquisition and mastery of written language. Concludes that written language acquisition requires a chain of interacting functions.

Wittrock, M. C. (Ed.). The human brain. Englewood Cliffs, N. J.:

Prentice Hall, 1977.

Contains very clear explications of the processes and components of the brain.

2. Language Localization

Geschwind, N. Language and the brain. Scientific American.

1972, 226(4), 76-83.

Reviews the history of aphasiology and suggests, from his own research results, that the relationship between language dysfunction and specific brain damage presents a model of specific neurological physiology relating to language.

Greenblatt, S. H. Neurosurgery and the anatomy of reading: a

practical review. Neurosurgery. 1977, 1(1), 6-15.

Studies language pathology following surgical severance of the corpus callosum, concludes that alexia without agraphia results from lesions of the pathways which conduct visual information. (Less readable than Scientific American articles on same subject but includes very lucid diagrams.)

Heilman, K. M. Language and the brain: relationship of localization

of language function to the acquisition and loss of various aspects of language. In J. S. Chall & A. F. Mirsky (Eds.).

Education and the brain. Chicago: The National Society for the Study of Education, 1978.

Discusses language pathology in localizationalist terms.

Penfield, W., & Roberts, L. Speech and brain mechanisms.

Princeton: Princeton University Press, 1959.

Provides excellent background through significant ten year study of the 1950's.

Whitaker, H. A. On the representation of language in the human

brain. Edmonton, Alberta: Linguistic Research, Inc., 1971.

Published version of Whitaker's dissertation deals with the neophyte discipline of neurolinguistics.

3. Hemisphere Lateralization

Bogen, J. E. Some educational implications of hemispheric

specialization. In M. C. Wittrock (Ed.), The human brain.

Englewood Cliffs, N. J. : Prentice Hall, 1977.

Discusses hemispheric specialization with implication for teaching and learning, concluding that hemispheric specialization is process-specific rather than material-specific, which indicates that the subject matter may be less important than its method of presentation.

Jaynes, J. The origin of consciousness in the breakdown of the bicameral mind. Boston: Houghton Mifflin, 1977.

Presents consciousness as an analog responsible for hemispheric specialization. (See application of Jaynes to writing in Mandel, B. J. The writer writing is not at home. College Composition and Communication. 1980, 31, 370-377.)

Winterowd, W. R. Brain, rhetoric, and style. Language and Style.

1980, 13, 151-181. (Also available through ERIC, ED 146 588.)

States that skilled writers utilize both left and right hemispheres (propositional and appositional) in the composing process. Deals with pedagogies that appeal to left or right brain dominant individuals. (Nearly as outrageous as he claims The origin of consciousness in the breakdown of the bicameral mind is, but provides stimulation for further research.)

Zangwill, O. L. The ontogeny of cerebral dominance in man. In

Lenneberg & Lenneberg, 1.

Discusses cerebral dominance as an evolutionary development restricted to humans.

4. Information Processing

Myerson, R. F. Perceptual decoding processes for language in a visual mode and for language in an auditory mode. 1974.

(ERIC ED 110 931.)

Discusses active and passive information processing systems and concludes that the writing system encodes language at a much more abstract level than the spoken system.

West, R. The neurophysiology of speech. In L. E. Travis (Ed.),

Handbook of speech pathology and audiology. Englewood

Cliffs, N. J. : Prentice Hall, 1971.

Discusses binary nature of mental activity, concludes all thinking and comprehension production of language is reducible to on/off, plus/minus, either/or, 1/0 processes. (Interesting binary theory but takes the metaphor of the computer literally.)

Winograd, T. What does it mean to understand language? Cognitive Science. 1980, 4, 209-241.

Discusses four domains of understanding language and concludes that speech-act theories must develop an appropriate calculus of language acts along the lines of illocutionary logic, linguistic taxonomy, and an adequate theory of reasoning. Concludes that educators must be conscious of meta-teaching.

5. Glossaries

Eccles, J. C. The understanding of the brain. New York: McGraw-Hill, 1973, pp. 228-238.

Technical neurophysiologic glossary.

Leibovic, K. N. (Ed.). Information processing in the nervous system. New York: Springer-Verlag, 1969, pp. 347-358.

Functional. Deals with brain functions from an information processing perspective.

Wittrock, M. C. The human brain. Englewood Cliffs, N. J. : Prentice Hall, 1977, pp. 185-207.

Helpful, readable, understandable.